

K4 SOFTWARE RELEASE NOTES

NOTE: Release notes exclude minor UI changes, as well as items pertaining only to debugging, manufacturing test, or internals.

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==== RELEASE 13 ====

5-3-2021

PANADAPTER SPECTRUM TRACE VISIBILITY: The spectrum trace is now positioned in front of the VFO cursors to improve visibility.

KREF4 FIRMWARE LOAD: Corrected a problem with release 12 that could cause KREF4 firmware to load incorrectly.

PANADAPTER FREEZE: Fixes a case where the panadapter randomly freezes, typically after hours of operation.

FLASH DRIVE IN FRONT USB JACK: Improved compatibility between most USB flash drives and the front USB jack.

AM AND FM TX: Transmit is now on frequency in these modes.

FOR SOFTWARE DEVELOPERS: Added TQ command GET. Improved TU command handling.

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==== RELEASE 12 ====

4-23-2021

TX INHIBIT INDICATION CHANGED: During TX inhibit, we no longer flash "TX". Instead we replace it with "TX Inh" for the duration of the inhibit event.

ATU MATCHES IMPROVED: The ATU now finds much better matches to Low-Z loads.

DATE/TIME SETTING FUNCTION: Tapping the time/date/status area, followed by a hold of "Set", now brings up a time setting window. This is intended for use when the K4 is not connected to the internet and requires time/date to be reset. One reason for this might be replacement of the backup battery. (If the K4 is or may be connected to the internet, check the box "Set Time/Date Automatically").

RX AUTO-ATTENUATION MENU ENTRY: Auto-attenuation due to excessively strong signals can now be used (set menu entry to ON). Previously, false ADC overflow conditions were reported during transmit. Note: Excessive signal strength is indicated by a change in color of the "+" in "+60" on the S-meter. If you see this indication persistently, consider either reducing front end gain manually or turning on auto-attenuation.

PANADAPTER IMPROVEMENTS: Use of dual pan with the sub RX turned on now always engages the K4D module (if available). This optimizes dynamic range in the case where the receivers are on different bands.

SHUT-DOWN ISSUE CORRECTED: Occasionally, the K4 was shutting down processes incorrectly at power-down.

FOR K4 DEVELOPERS: (1) The command sequence "K41;ME75.1;PC;" is now working as expected. (2) The #CAL command now automatically sets up the radio for panadapter level calibration. (3) Added experimental support for DM command.

PANADAPTER AVERAGING CHANGE: The parameter range for averaging is now 1-20 instead of 0-20. The original "0" setting was too fast to be useful.

DTMF: In FM mode, the user can now enter DTMF codes. Tap TX, then hold DTMF. PTT or XMIT must be asserted as well. Note: Work on this is still in progress.

UPDATER PROGRAM CHANGE: Removed the "Restore Defaults" button, which restored all factory defaults. A more nuanced init feature will be added. Note that you can also reset *individual* menu parameters to their factory default by tapping the NORM button.

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==== RELEASE 11 ====

4-10-2021

GENERAL IMPROVEMENTS: Various stability enhancements.

PREAMP 3 SETTING ADDED: On 12/10/6 meters, there's now an optional preamp 3 (PRE3) setting. To enable preamp 3, use MENU:Preamp 3 (12/10/6). MDS improves by up to 4 dB over preamp 2.

FSK DTR SELECT LINES CORRECTED: DTR lines for FSK source selection were in the wrong order. Note: Even though the DTR lines are now in the correct order, they're still inverted in hardware.

S-METER STUCK WHEN SUB RX TURNED OFF: The DSP was only sending new values for S-meter purposes when the signal level was changing. This could leave the S-meter "hung" when the sub RX was turned off, and in certain other cases. To catch these cases, we now update the S-meter periodically even when the signal level is static.

MAIN PANADAPTER SPECTRAL LEAKAGE FIXED: The main panadapter was exhibiting spectral leakage ("Christmas tree effect") at spans below 20 kHz. Further work pending to correct spectral leakage in mini-pan at high signal levels.

MOVED 60/40 METER BAND BOUNDARY: This boundary was originally at 6.000 MHz. Moved to 5.950 MHz to avoid VFO tuning delays when tuning right at 6.000.

APF LOST ON A/B SWAP -- FIXED: When the audio peaking filter (APF) was turned on, then A/B VFOs swapped, the APF setting was sometimes getting lost. This has been corrected.

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==== RELEASE 10 ====

SPECTRUM FREQUENCY MARKS: There are now vertical dotted lines in the spectrum area corresponding to major frequency intervals (1, 2, 5, 10, 20, or 50 kHz depending on the SPAN). These lines can be turned off using the Spectrum Freq. Marks menu entry. (However, they've proven to be very useful, so we recommended leaving them on.)

S-METER LABELING OF SPECTRUM AMPLITUDE: The user can now select either dBm or S-units for spectrum amplitude labeling. Use menu entry "Spectrum Amplitude Units".

SCREEN CAPTURE SAVES BOTH LCD AND EXTERNAL MONITOR IMAGES: When a screen capture is done, it creates two image files, one for the LCD and one for the external monitor.

MESSAGE REPEAT INDICATION: When a repeating message is in effect, the message bank icon is replaced with flashing "MSG RPT" until repeat is cancelled.

160 METER SENSITIVITY: MDS on this band improved by 3 to 4 dB in preamp-off case. This was accomplished by turning off the AM broadcast band filter on this band, only, by default. The user can override this using the RX 1.5 MHz High-Pass Fil. menu setting.

REFERENCE LOCK: When the K4 is locked to an external 10 MHz reference, absolute VFO accuracy is now about +/- 1 or 2 Hz at 14 MHz. The reference module (KREF4) can also now determine if the 10 MHz external reference is stable enough to be used. If not, it alerts the SBC. A message displaying this condition is still pending.

MINI-PAN "PEDESTAL": (Bug#708,#51,#576,#363) Removed pedestal from minipan by changing sample rate cross-over points.

NOISE BLANKER APPLIED TO MINI-PAN: Previously, the display NB function only applied to the main panadapters.

FM CONTROLS: Added FM PL tone and repeater offset selections. These are accessed using the TX main function while in FM mode.

XVTR OUT POWER SETTINGS: In XVTR OUT Test mode, the PWR control sets RF output from 0 to 5.0 mW at XVTR OUT. In conjunction with this, the PCnnnX command has been implemented (XVTR power setting). At present, sending PCnnnX to KRAD puts the radio into XVTR OUT Test mode and routes signals to the XVTR IN/OUT jacks (see next item). Sending PCnnnL or PCnnnH returns to normal QRP/QRO operation.

BASIC K4 USE OF PANADAPTER: Improvements in panadapter behavior in this case (non-K4D). SPAN can now be set independently for main and sub panadapters.